



Docket No. END-0736

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Jeffrey D. Messerly  
Serial No. : 09/826,070  
Filed : April 4, 2001  
Title : **Blades with Functional Balance Asymmetries for Use with Ultrasonic Surgical Instruments**  
Art Unit :  
Examiner :

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March 5, 2003  
(Date of Deposit)

Patricia A. Deffinger

(Signature)

March 5, 2003  
(Date of Signature)

**SECOND PRELIMINARY AMENDMENT**

Honorable Commissioner of Patents  
Washington, D.C. 20231

Dear Sir:

**In the Claims:**

Please cancel all claims pending, which are 1-4 and replace with the following:

19. An end effector for use in an ultrasonic surgical instrument, wherein said end effector comprises;

Second Preliminary Amendment

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an ultrasonic transmission rod having a proximal end and a distal end;  
an ultrasonically actuated blade attached to said distal end of the transmission rod, wherein the blade comprises:

a distal end;  
a proximal end connected to the transmission rod at a longitudinal vibratory node point;  
a treatment portion including at least one functional asymmetry and a balance asymmetry, wherein the balance asymmetry is positioned to counter torque created at the proximal end of the blade by the functional asymmetry.

20. The end effector of claim 19, wherein the balance asymmetry is positioned such that transverse vibrations in at least one axis at the distal end of the blade are substantially equal to zero.

21. An ultrasonic waveguide having a proximal end and a distal end for use in an ultrasonic surgical instrument, wherein the waveguide comprises:

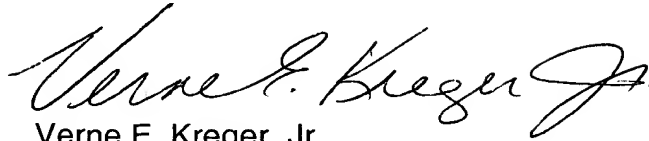
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B,  
a balanced ultrasonically actuated blade positioned at the distal end of the waveguide, wherein the blade comprises:  
a distal end;  
a proximal end;  
a curved treatment portion, and the curved treatment portion comprising  
a balance portion including at least one balance asymmetry, wherein the balance asymmetry is positioned to counter torque created by the curved treatment portion.

22. The waveguide of claim 21, wherein the balance portion extends from the distal end of the blade to a point within the treatment portion.

23. The waveguide of claim 21, wherein the balance portion extends from the distal end of the blade to a point proximal to the treatment portion.

24. An ultrasonic surgical instrument including a balanced blade, the surgical instrument comprises:
- a handle including a ultrasonic handpiece;
  - an ultrasonic waveguide having a proximal end and a distal end, wherein the proximal end is operatively connected to the handpiece;
  - the balanced blade connected to the distal end of the waveguide, wherein the balanced blade comprises:
    - a distal end;
    - a proximal end connected to the waveguide at a longitudinal vibratory node point;
    - a treatment portion including at least one functional asymmetry and a balance region including at least one balance asymmetry, wherein the balance asymmetry is positioned to counter torque created by the functional asymmetry.
25. The surgical instrument of claim 24, wherein the balance asymmetry is positioned such that transverse vibrations are substantially equal to zero.
- B, 26. An ultrasonic waveguide having a proximal end and a distal end for use in an ultrasonic surgical instrument, wherein the waveguide comprises:
- a balanced ultrasonically actuated blade positioned at the distal end of the waveguide, wherein the blade comprises:
    - a distal end;
    - a proximal end;
    - a treatment portion defined in part by a first radiused cut defining a first side and offset from a second radiused cut defining a second side to form a curved geometry, and the treatment portion further comprising at least one balance asymmetry, wherein the balance asymmetry is positioned to counter torque created by the curved geometry.
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Respectfully submitted,

A handwritten signature in black ink, reading "Verne E. Kreger, Jr." in a cursive script.

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Reg. No. 35,231

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